A NOVEL TECHNIQUE TO DELIVER EPIDURAL PULSED RADIOFREQUENCY FOR THE MANAGEMENT OF PERSISTENT LUMBAR RADICULAR PAIN IN FAILED BACK SURGERY SYNDROME - A CASE REPORT.

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Background:
Radicular pain has been successfully treated with pulsed RF to dorsal root ganglia [1]. A transforaminal approach is most commonly used, but may be unsuccessful in cases with abnormal anatomy or implanted metalwork. In these situations, an interlaminar approach may be required. A recent case report [2] identified the successful treatment of lumbar radicular pain in a cancer patient using a guidable radiofrequency injection electrode with a metallic coil active tip and embedded temperature sensor.

Here we describe a case report where we successfully treated lumbar radicular pain in a patient with failed back surgery syndrome (FBSS) using the same guidable radiofrequency injection electrode with a metallic coil active tip and embedded temperature sensor (RCE-E401519, Cosman Medical, Inc., USA).

Case Report:
A 56 year old woman with a background of spinal fusion L4-S1 and persistent right-sided radicular leg pain had previously short lived analgesia from a caudal epidural with subsequent failed attempts at a DRG block due to difficult anatomy. A recent MRI of the Lumbar spine confirmed right L5 nerve root compression and excluded fibrosis or arachnoiditis.

Intervention:
Under fluoroscopic guidance, a guidable RF injection electrode with 20ga/15mm active tip, embedded temperature sensor, and 19ga/40cm shaft (Cosman RCE-E401519) was introduced via the sacral hiatus using a straight 16ga/9cm epidural needle.

The active tip of the electrode was positioned at the level of L4-5 on the right side. Sensory stimulation at this level reproduced the patient’s pain and pulsed RF was applied at this single location using an RF generator (Cosman G4) settings:
- Set Temperature: 42 °C
- Set Time: 12 minutes
- Set Voltage: 45 Volts
- Pulse Rate: 2 Hz
- Pulse Width: 5 milliseconds
- E-dose: Vary Voltage. The generator maintained 45 V output throughout and the measured temperature did not exceed 42 °C.

Results:
The patient reported immediate excellent pain relief, which was maintained for 6 weeks (at time of writing). This was supported by the reported reduction of the analgesic medication usage, increased activity and improved sleep symptoms.

Conclusion:
When PRF is technically difficult using the conventional transforminal route, due to abnormal anatomy from previous spinal surgery, an interlaminar technique may provide an effective alternative.

References: